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**SITE MANAGEMENT PLAN
AERO TECH MANUFACTURING FACILITY
395 WEST 1100 NORTH
NORTH SALT LAKE, UTAH**

Project No. 1076-120D

Prepared For

**Mr. Brian Moore
Aero Tech Manufacturing
395 West 1100 North
North Salt Lake, UT 84054**

September 5, 2008

Prepared by

**Wasatch Environmental, Inc.
2410 West California Avenue
Salt Lake City, UT 84104**

Mr. Brian Moore
Aero Tech Manufacturing Facility
395 West 1100 North
North Salt Lake, Utah 84054

September 5, 2008
Project No.: 1076-120D


SUBJECT: Remediation Action Implementation Report
Aero Tech Manufacturing Facility
395 West 1100 North
North Salt Lake, Utah

Wasatch Environmental, Inc., has prepared this Site Management Plan to present the planned long-term approach for monitoring and managing chlorinated solvent impacts to soil and groundwater following source removal activities conducted at the Aero Tech Manufacturing site. This Site Management Plan has been prepared in accordance with the requirements of R315-101 "Cleanup Action and Risk-Based Closure Standards."

Should you have any questions, please do not hesitate to contact us.

Sincerely,

WASATCH ENVIRONMENTAL, INC.



Julie Kilgore, Principal
Environmental Manager



Rebecca Studenka
Rebecca Studenka
Project Geologist

Les Pennington, P.E.
Principal Engineer

Distribution: (1) Addressee
(1) Mr. Alex Pashley, DSHW

TABLE OF CONTENTS

<u>Section</u>	<u>Page No.</u>
1. INTRODUCTION.....	1
1.1 Site Description	1
1.2 Site Background	1
1.3 Oil/Water Separator and Soil Excavation.....	2
2. SITE-SPECIFIC RISK-BASED CLEANUP LEVELS.....	2
3. SITE MANAGEMENT	3
3.1 Institutional Controls.....	3
3.2 Long-Term Site Monitoring.....	3
3.3 Groundwater Remediation Options – Source Area	4
4. GROUNDWATER MONITORING.....	5
5. QUALITY ASSURANCE/QUALITY CONTROL PLAN.....	5
5.1 Data Validation.....	5
5.2 QA/QC Samples.....	6
6. QUARTERLY GROUNDWATER MONITORING REPORTS	6
7. HEALTH AND SAFETY	6
8. PROJECT SCHEDULE	6

Figure 1 – Trichloroethene Concentrations in Ground Water

Figure 2 – Sample Results from Excavation Area

Figure 3 – Proposed Monitoring Well Locations

**SITE MANAGEMENT PLAN
AERO TECH MANUFACTURING FACILITY
395 WEST 1100 NORTH
NORTH SALT LAKE, UTAH**

1. INTRODUCTION

On behalf of Aero Tech Manufacturing, Wasatch Environmental, Inc., has prepared this Site Management Plan to present the planned long-term approach for monitoring and managing chlorinated solvents impacts present at the Aero Tech Manufacturing Facility. The Site Management Plan has been prepared in accordance with the requirements of R315-101 "Cleanup Action and Risk-Based Closure Standards" that establishes information requirements to support risk-based cleanup and closure standards at sites for which remediation or removal of hazardous constituents to background levels is not expected to be achieved.

1.1 Site Description

The Aero Tech Manufacturing Facility is located at 395 West 1100 North in North Salt Lake and is further identified as Davis County property tax assessor number 06-090-0020. The legal description for the target property is "All of Lot 20, North Salt Lake Industrial Park, Plant B."

The property is occupied by a 75,000-square-foot building constructed in 1978. The northwestern portion of the building is occupied by 10,000 square feet of office space (5,000 square feet on each floor), with the remainder of the building used for manufacturing.

1.2 Site Background

As presented in the November 2007 "Phase I Environmental Site Assessment" prepared by Wasatch, the Aero Tech Manufacturing facility was vacant undeveloped land prior to development for its current use in 1978. Aero Tech operations include the purchase of flat pieces of metal and then shearing, punching, forming, welding, and painting to create end products that are then shipped to end users. As presented in the Phase I ESA, prior to 1990 a vapor degreaser was used to clean parts. The vapor degreaser was located in what is now the steam cleaning/clarifier room where floor drains discharge into the sanitary sewer. The vapor degreaser was set in a sub-grade concrete-lined containment in order to lower the height of the hatch for placing parts and adding solvent into the vapor degreaser.

Wasatch conducted subsurface investigation activities at the Aero Tech facility that identified chlorinated solvent constituent impacts to soil and groundwater on the site. The primary constituent of concern identified at the Aero Tech Manufacturing facility is tetrachloroethene (TCE) and its associated breakdown products cis-1,2-dichloroethene and vinyl chloride. Site investigation activities conducted at the site have delineated the vertical and horizontal extent of soil and groundwater impacts at the property (Figure 1). Groundwater flow direction was to the southwest, and analytical results indicate that no TCE or associated breakdown products are migrating onto or from the Aero Tech property.

The highest concentrations of TCE in both soil and groundwater were identified in the area of the oil/water separator (240,000 ug/kg at 13 feet below ground surface [bgs] and 50,000 ug/L at 16 to 20 feet bgs, respectively). In this area, analytical results indicate decreasing concentrations of TCE in groundwater with depth (3,400 ug/L at 25-30 feet bgs, 290 ug/L at 35-40 feet bgs), and decreasing concentrations of TCE in soil with depth (25 ug/kg at 20 feet and below detection limits at 45 feet bgs). A stiff clay unit was encountered in all probe locations across the site between 19 to 22.5 feet bgs. No TCE or its breakdown products were detected in the soil samples collected from this stiff clay unit except in the area of the oil/water separator.

Beneath the Aero Tech building, TCE concentrations in groundwater ranged from 6.6 ug/L to 150 ug/L at depths ranging from 4 to 11 feet bgs. TCE concentrations ranged from 21 ug/L to 75 ug/L at depths ranging from 15 to 20 feet bgs. No TCE or associated breakdown products were identified in the soil samples collected from 23 to 25 feet bgs.

Outside the western portion of the building, TCE concentrations in groundwater ranged from 2.2 ug/L to 26 ug/L. No significant concentrations of TCE or associated breakdown products were identified in soil samples collected from outside the western portion of the building.

As part of previous site investigation activities, geochemical parameters were obtained to evaluate the biodegradation potential for TCE at this site. Preliminary data indicate that biodegradation of TCE is occurring at the site.

1.3 Oil/Water Separator and Soil Excavation

In accordance with the Remediation Plan dated May 13, 2008, and the Amendment to Remediation Plan dated May 30, 2008, Wasatch completed the first two steps of the remedial implementation process for addressing the volatile organic compound (VOC) impacts at this site. These steps included removal of the oil/water separator and source removal around and beneath the oil/water separator area where the highest concentrations of TCE in soil and groundwater were identified, and application of a chemical oxidation agent to react with TCE remaining in the immediate area of the excavation after source removal activities were completed.

Confirmation soil samples were collected from several locations within the excavation to assess the concentrations of TCE-impacted soil remaining outside the limits of the excavation (Figure 2). Soil sample analytical results indicate that relatively low concentrations of TCE are present in shallow soils (28 ug/kg at 4 feet bgs), at the groundwater interface (59 ug/kg at 7 feet bgs), and at the bottom of the excavation (1,500 ug/kg at 17 feet bgs). Consistent with waste profile samples previously collected, the highest zone of TCE contamination identified subsequent to excavation activities was at approximately 13 feet bgs, ranging from 57,000 ug/kg at the east sidewall to 74,000 ug/kg at the southwest sidewall.

2. SITE-SPECIFIC RISK-BASED CLEANUP LEVELS

A human health risk assessment was completed for the Aero Tech property based on information collected during previous investigations, combined with the land use on and surrounding the property. Site-specific modeling was employed to evaluate appropriate site-specific risk-based cleanup levels (SSRBCLs). For groundwater, the SSRBCLs are based on vapor intrusion, which is the migration of constituents from the subsurface into indoor air. Based on the methodology employed in the Risk Assessment, an SSRBCL of 630 µg/l was calculated for TCE in groundwater. SSRBCLs for other constituents in groundwater and soil are not warranted, based on both the data used in the Risk Assessment as well as the results obtained from soil samples following the soil excavation. Federal MCLs are still applicable at property boundaries.

Prior to excavation activities, the maximum TCE concentration detected in groundwater from near the top of the water table was 850 µg/l. All other water table samples have had concentrations below the SSRBCL. The exposure point concentration used in the risk assessment for TCE was 680 µg/l, slightly above the SSRBCL.

3. SITE MANAGEMENT

Based on the results of the site investigations, soil samples collected after excavation activities, and SSRBCLs, Wasatch proposes the following approach to long-term management of this site:

- Step 1 – Institutional Controls
- Step 2 – Long-Term Site Monitoring
- Step 3 – Source Area Groundwater Remediation if concentrations of TCE exceed SSRBCLS.

3.1 Institutional Controls

A Risk Assessment has been completed for the Aero Tech Manufacturing site. As indicated in the Risk Assessment, the Site-Specific Risk-Based Cleanup Level (SSRBCL) for TCE in groundwater at the site has been established at 630 ug/L. Because the SSRBCL exceeds the federal MCL for TCE in groundwater, as part of the corrective action at the Aero Tech Manufacturing facility, the owners of Aero Tech Manufacturing agree to comply with the following activity and use limitation:

- Use of the groundwater on the Aero Tech Manufacturing property shall be prohibited for any purpose. There shall be no installation of any groundwater well, except those approved by Utah Department of Environmental Quality, on the Aero Tech Manufacturing property.
- The property would not be used for residential or day care.

The institutional control will be filed for recording, in the same manner as a deed to the property, with the Davis County Recorder's Office.

3.2 Long-Term Site Monitoring

To establish baseline conditions and monitor results of active remediation and natural attenuation, a series of permanent monitoring wells will be installed on the property. Proposed monitoring well locations are presented as Figure 5 and will include:

- One set of nested monitoring wells (MW-1s and MW-1d) will be installed hydraulically upgradient of the oil/water separator where chlorinated solvents have not been detected. The shallow monitoring well (MW-1s) will be constructed of 2-inch I.D. PVC casing with 5 feet of 2-inch I.D. PVC screen installed from 5 to 10 feet bgs (vadose/saturation zone interface). The deep monitoring well (MW-1d) will be constructed of 2-inch I.D. PVC casing with 5 feet of 2-inch I.D. PVC screen installed from 12 to 17 feet bgs (depth of highest observed chlorinated solvent impact).
- One set of nested monitoring wells (MW-2s and MW-2d) will be installed near the oil/water separator to monitor anticipated decreasing trends in the source area. Both monitoring wells will be installed in the former excavation area, but screened below the backfilled material. The shallow monitoring well (MW-2s) will be constructed of 2-inch I.D. PVC casing with 5 feet of 2-inch I.D. PVC screen installed from 25 to 30 feet bgs, and the deep monitoring well (MW-2d) will be constructed of 2-inch I.D. PVC casing with 5 feet of 2-inch I.D. PVC screen installed from 35 to 40 feet bgs.
- One monitoring well (MW-3) will be installed in the source area (oil/water separator) to monitor for the presence of chlorinated solvents. This monitoring well will be constructed of 4-inch I.D. PVC casing with 5 feet of 4-inch I.D. PVC screen installed from 4 to 9 feet bgs and 2½ feet of screen installed 14.5 to 17 feet bgs. The monitoring well will be screened at these intervals so that the well can be used for groundwater remediation if deemed necessary in the future based on subsequent groundwater analytical results.

- To evaluate TCE concentrations in the shallow groundwater between the oil/water separator and the building, one monitoring well (MW-4) will be installed immediately hydraulically downgradient from the source area outside the Aero Tech building. This monitoring well will be constructed of 2-inch I.D. PVC casing with 5 feet of 2-inch I.D. PVC screen installed from 5 to 10 feet bgs (vadose/saturation zone interface).
- Two sets of nested monitoring wells (MW-5 and MW-6) will be installed outside the western portion of the building where low concentrations of chlorinated solvents have been detected. The shallow monitoring wells (MW-5s and MW-6s) will be constructed of 2-inch I.D. PVC casing with 5 feet of 2-inch I.D. PVC screen installed from 5 to 10 feet bgs (vadose/saturation zone interface). The deep monitoring wells (MW-5d and MW-6d) will be constructed of 2-inch I.D. PVC casing with 5 feet of 2-inch I.D. PVC screen installed from 12 to 17 feet bgs (depth of highest observed chlorinated solvent impact in the source area).
- Three sets of nested monitoring wells (MW-7 through MW-9) will be installed hydraulically downgradient of the groundwater plume where chlorinated solvents have not been detected. The shallow monitoring wells (MW-7s through MW-9s) will be constructed of 2-inch I.D. PVC casing with 5 feet of 2-inch I.D. PVC screen installed from 5 to 10 feet bgs (vadose/saturation zone interface). The deep monitoring wells (MW-7d through MW-9d) will be constructed of 2-inch I.D. PVC casing with 5 feet of 2-inch I.D. PVC screen installed from 12 to 17 feet bgs (depth of highest observed chlorinated solvent impact in the source area).

Soil borings in which 2-inch I.D. nested monitoring wells are constructed will be advanced with a drill rig using 10.25" I.D. hollow-stem augers. Soil borings in which 4-inch I.D. monitoring wells are constructed will be advanced with a drill rig using 7.25" I.D. hollow-stem augers. Drilling cuttings generated in the primary source area will be placed in 55-gallon drums and evaluated for proper disposal. All other drilling cuttings will be spread out on vacant unused portions of the target property.

As previously discussed, the monitoring wells will be installed using 5-foot, 2-inch or 4-inch I.D. PVC casing and screens. Filter sand will be placed around each monitoring well screen to a depth approximately 1 foot above the top of the screen. Bentonite chips will be placed on top of the sand to a depth of approximately 1 foot bgs. Flush-mount protective covers will be cemented around the top of each newly installed monitoring well.

Each monitoring well will be developed to remove fines from the well screens prior to sampling. Monitoring wells installed with 2-inch I.D. construction will be developed using disposable polyethylene bailers. The monitoring well installed with 4-inch I.D. construction will be developed using a Grundfos pump. All development water will be poured into 55-gallon drums and stored on site. Disposal options would be evaluated depending on laboratory analysis. In addition, monitoring well top-of-casing elevations will be surveyed to within 0.01-foot by Wasatch personnel using an on-site benchmark assigned an arbitrary value of 100.00 feet above mean sea level.

3.3 Groundwater Remediation Options – Source Area

Monitoring well MW-3 has been designed in a manner that would allow the well to be utilized for active remediation within the source area. At any time groundwater monitoring results from MW-3 identify TCE concentrations within the source area exceeding the SSRBCL of 630 ug/L, the monitoring well can be used for groundwater extraction, in-well air stripping, and/or chemical oxidation.

TCE-impacted groundwater that accumulates in the excavation can be treated in situ using in-well air stripping with air lift pumping. The injection of air at the bottom of the well will create groundwater circulation within the excavated area whereby the injected air lifts water from the lower portion of the well. As water exits the upper screen, water is drawn into the lower screen, and at the same time the injected air will strip dissolved TCE from the groundwater. This technology, also known as groundwater recirculation, has been used effectively with a variety of VOC contaminants and may be used intermittently or continuously. To enhance the effectiveness of treatment in the source area, a chemical

oxidation agent such as 5 to 10% permanganate solution can be injected into the recirculation well and circulated within the excavation. This oxidation agent will react with TCE in the groundwater within the excavation and degrade the TCE to ethene in a relatively short amount of time.

If groundwater monitoring results from MW-3 indicate that in-well air stripping and/or recirculation of a chemical oxidation agent are not effective in addressing contaminants in the excavation area, MW-3 could also be utilized as a groundwater extraction well. The impacted groundwater would be pumped from the lower screen of MW-3 and stored in drums or tanks until disposal options are evaluated.

4. GROUNDWATER MONITORING

As part of the Site Management Plan, long-term groundwater monitoring will be conducted. Quarterly groundwater monitoring would be conducted during the first year, and a quarterly groundwater monitoring report would be prepared. After one year of quarterly groundwater monitoring, the groundwater monitoring results will be evaluated, and Wasatch will discuss with Aerotech and DSHW personnel the frequency of groundwater sampling events and the number of wells to continue sampling.

Groundwater samples will initially be collected using the low-flow method. Groundwater samples will be collected using a peristaltic pump and inert tubing at each of the monitoring well locations. The inert tubing will be inserted into each monitoring well until groundwater is encountered. Groundwater will be evacuated using the peristaltic pump, and purge water will be containerized in on-site 55-gallon drums.. Temperature, dissolved oxygen (DO), pH, and oxygen reduction potential (ORP) measurements will be obtained using a Multi-parameter Troll 9000 meter. A groundwater sample will be collected from each monitoring well once pH, temperature, DO, and ORP have stabilized. Stability will be considered complete when three consecutive readings are within 0.1 pH units, and 10 percent DO, ORP, and temperature. Groundwater samples will be collected into appropriate bottles with gloved hands. New polyethylene tubing will be used at each temporary monitoring well location. The sample jars will be labeled, immediately placed in iced coolers, and transported under chain of custody documentation to a Utah-certified laboratory (American West Analytical Laboratory) for volatile organic analyses using U.S. EPA Method 8260B. Periodically, groundwater samples would be analyzed for ethene and methane using U.S. EPA Method 8015 to monitor the progress of expected biodegradation of chlorinated constituents.

5. QUALITY ASSURANCE/QUALITY CONTROL PLAN

Wasatch will assure the quality of all laboratory data through validation of the analytical results and the collection of project-specific quality assurance/quality control (QA/QC) samples.

5.1 Data Validation

All sample results, including laboratory QC summaries, will be reviewed by an independent data validator to determine the overall precision, accuracy, and completeness of the laboratory data.

Precision of the data will be determined by reviewing the variability of results between both field and laboratory duplicate samples (see Section 5.2). Accuracy of the data will be determined by reviewing laboratory control, matrix spike and surrogate recoveries and laboratory method blank results. Precision of field and laboratory duplicates will be evaluated based on the Relative Percent Difference (RPD), which is defined as the absolute difference between two duplicate samples divided by the mean and expressed as a percent. The RPD for field duplicate samples should not exceed 25 percent.

Data will be reviewed for completeness with respect to the requested analyses versus what was actually reported by the laboratory. Specific criteria to be followed include: sample collection procedures, sample handling, analytical procedures, quality control procedures, and data reduction and processing.

5.2 QA/QC Samples

During the groundwater monitoring activities, one set of project-specific QA/QC samples will be collected (based on a total of groundwater samples to be collected). These will include: Blind Duplicate, Matrix Spike (MS), Matrix Spike Duplicate (MSD), and Trip Blank samples. An equipment blank sample will not be required because of the anticipated use of disposable sampling equipment (i.e., peristaltic pump equipped with disposable tubing). If disposable equipment is not used, an Equipment Blank will be collected by pouring deionized water over and through the decontaminated equipment.

Matrix spike (MS) and matrix spike duplicate (MSD) samples will be collected at the same time from the same location as the original sample and will be labeled with the identical sample identification number; however, a note will be made on the chain-of-custody and the sample label specifying that the samples are MS and MSD samples, respectively.

The duplicate samples will be collected as a "blind duplicate" and will be given a fabricated sample identification number so that the true sample location is not known to the laboratory. It will not be noted on either the sample label or chain-of-custody that the sample is a duplicate. The duplicate identification number and true sampling location, as well as the time and date the sample was collected, will be carefully noted in the field logbook. This procedure further ensures the integrity of the laboratory data.

A Trip Blank consisting of deionized water will be provided with the groundwater sample containers by the laboratory to detect potential volatile contaminants introduced during transport or analysis of the samples.

6. QUARTERLY GROUNDWATER MONITORING REPORTS

Following completion of each groundwater monitoring event and upon receipt of the analytical results, Wasatch will prepare Groundwater Monitoring Reports detailing field activities and procedures, summarizing results of chemical analyses, and providing interpretation of the collected data.

All data presented in the report will be arranged in a clear and logical format using Excel spreadsheets. Tables will be prepared to present data such as laboratory analytical summaries and field measurements. Additional data will be presented graphically as appropriate to show sample locations, site surface features, and other relevant information. Copies of all laboratory reports will be provided as appendices to the Quarterly Groundwater Monitoring Reports.

7. HEALTH AND SAFETY

All site activities will be performed by Wasatch and our subcontractors in accordance with Wasatch's general health and safety policy. A site-specific Health and Safety Plan will be prepared to address specific health and safety concerns and establish protocols for conducting work related activities for monitoring well installation, DDC system installation, and groundwater monitoring activities in a safe manner.

8. PROJECT SCHEDULE

The anticipated start of monitoring well installation and the initial round of groundwater sampling will be within 60 days. The expected duration to install and develop the permanent groundwater monitoring wells and to collect baseline groundwater samples is two weeks.

Beginning approximately three months after completing monitoring well installations, three additional quarterly groundwater monitoring rounds would be conducted. A groundwater monitoring report would be prepared after each monitoring event and would be submitted to DSHW within 30 days of receiving the quarterly groundwater monitoring analytical results.

After four quarters of groundwater monitoring, we anticipate two rounds of groundwater monitoring during the second year, followed by annual monitoring thereafter. However, this groundwater monitoring schedule may be adjusted to more frequent sampling events if analytical data indicates that the groundwater plume has not stabilized.

SS-1 @ 4'	
Trichloroethene	28 ppb

SS-2 @ 7'	
Trichloroethene	59 ppb
cis 1,2-Dichloroethene	38 ppb
Vinyl Chloride	4.3 ppb

SS-7 @ 10'	
Trichloroethene	5,100 ppb
cis 1,2-Dichloroethene	170 ppb
1,1-Dichloroethene	5.6 ppb
Vinyl Chloride	3.7 ppb
1,1-Dichloroethane	5.7 ppb

SS-6 @ 13'	
Trichloroethene	74,000 ppb
cis 1,2-Dichloroethene	800 ppb
trans 1,2-Dichloroethene	9.4 ppb
1,1-Dichloroethene	110 ppb
Vinyl Chloride	33 ppb
1,1,1-Trichloroethane	17 ppb
1,1-Dichloroethane	110 ppb

SS-3 @ 17'	
Trichloroethene	1,500 ppb
cis 1,2-Dichloroethene	34 ppb
Vinyl Chloride	2.3 ppb
1,1-Dichloroethane	9.8 ppb

EXCAVATION
LIMITS
(12' X 14' X 17')

SS-1 @ 4'
SS-2 @ 7'
SS-7 @ 10'
SS-6 @ 13'

SS-3 @ 17'
SS-8 @ 10'
SS-5 @ 13'
SS-4 @ 13'

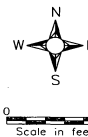
FORMER
SAMPLING
MANHOLE

FORMER
OIL/WATER
SEPARATOR

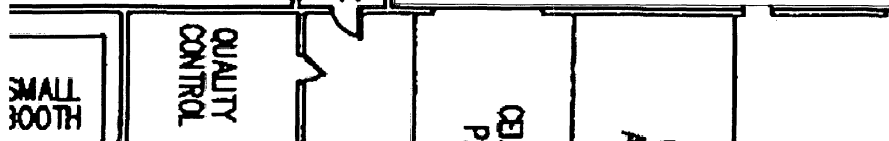
SS-8 @ 10'	
Trichloroethene	13 ppb

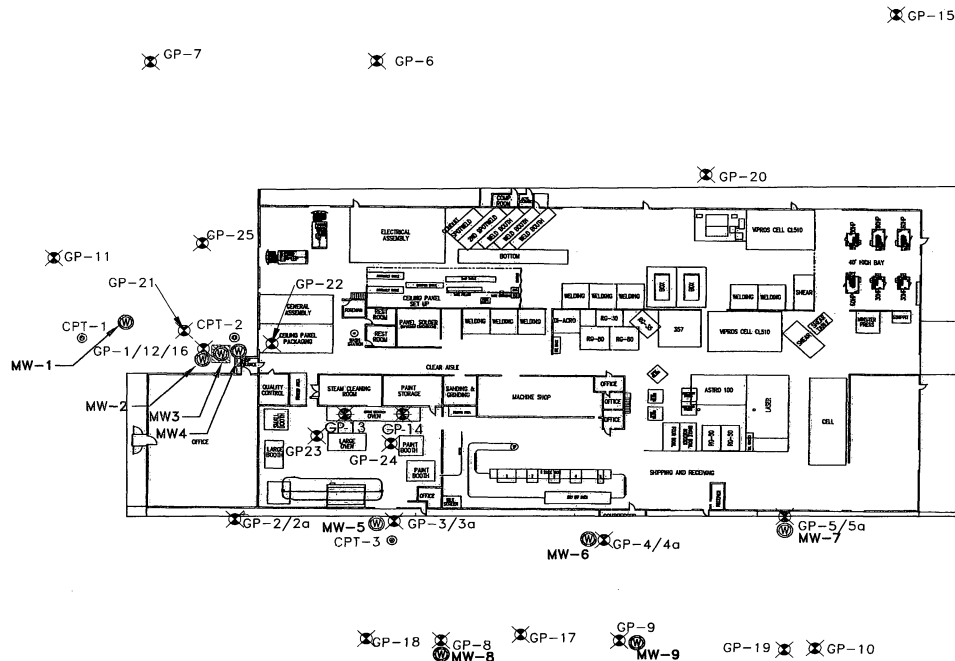
SS-5 @ 13'	
Trichloroethene	57,000 ppb
cis 1,2-Dichloroethene	1,100 ppb
trans 1,2-Dichloroethene	7.4 ppb
1,1-Dichloroethene	78 ppb
Vinyl Chloride	19 ppb
1,1-Dichloroethane	110 ppb

SS-4 @ 13'	
Trichloroethene	62,000 ppb
cis 1,2-Dichloroethene	1,300 ppb
trans 1,2-Dichloroethene	10 ppb
1,1-Dichloroethene	97 ppb
Vinyl Chloride	23 ppb
1,1-Dichloroethane	140 ppb



SS-1
SOIL SAMPLES COLLECTED
FROM EXCAVATION

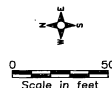




MONITORING WELLS		
WELL NO.	SIZE	SCREEN/DEPTH
1	2"	5'-10", 12'-17"
2	2"	25'-30", 35'-40"
3	4"	4'-9", 14.5'-17"
4	2"	5'-10", 12'-17"
5	2"	5'-10", 12'-17"
6	2"	5'-10", 12'-17"
7	2"	5'-10", 12'-17"
8	2"	5'-10", 12'-17"
9	2"	5'-10", 12'-17"

Legend

- Proposed Monitoring Well
- Oil Water Separator
- CPT - Cone Penetrometer Test Location
- GP- Geoprobe Sample Location



WASATCH
ENVIRONMENTAL
Environmental Science and Engineering
2410 West California Avenue
Salt Lake City, UT 84104
801-972-8400
www.wasatch-environmental.com

PROPOSED
MONITORING WELL LOCATIONS
AERO TECH
North Salt Lake City,
Utah

PROJECT NO.	DRAWING DATE	FIGURE 3
1076-120D	8/7/2008	